

### Remarks

Claims 66-96 have been added. Claims 1-65 have been cancelled without prejudice to, or disclaimer of, the underlying subject matter. No new matter enters by these amendments. Support for the new claims may be found throughout the specification and in the original claims, for example, at page 3, lines 3 through 32; page 4, line 6 through page 7, line 7; and page 9, lines 6 through 17. This application presently contains claims 66-96.

Applicants thank the Examiner for returning the initialed Form 1449. Applicants further thank the Examiner for indicating that three references made of record and not relied upon are considered pertinent to Applicants' disclosure. Office Action at pages 4-5.

#### *I. Rejections under 35 U.S.C. § 103(a)*

Claims 28-65 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Shamir (U.S. 5,118,369, filed August 23, 1990). Office Action at page 2. The Office alleges that "[i]t would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to further modify the teachings of Shamir with extra small particles including the specific range(s) in order to implement non-visible indicia/barcode that cannot be interpreted with the naked eye (*e.g.*, increase the security of extra small/miniature items which are marked)." Office Action at page 3. The Office asserts that "[f]urther such modification would be a matter of design variation to have a desirable size and could be adjusted/modified suitably to fit the appropriate application, that is to accommodate the item's/product's dimension." Office Action at page 3. Finally, the Office alleges that "since it has been held that the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233." Office Action at page 3. Applicants respectfully disagree.

In order to facilitate prosecution, and without acquiescing to the Examiner's arguments or the Examiner's characterization of the references, Applicants have cancelled claims 28-65 without prejudice to, or disclaimer of, the underlying subject matter. To expedite prosecution, Applicants have addressed the Examiner's arguments in view of new claims 66-96.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on the applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

A *prima facie* case of obviousness requires that the prior art reference, or references when combined, teaches or suggests all of the claim limitations. Whatever else Shamir teaches, it does not teach a microparticle, which is in the form of a wafer whose thickness is from 0.1  $\mu\text{m}$  to 5  $\mu\text{m}$ , wherein the microparticle is marked with digitally-coded machine-readable information, the machine-readable information being etched through the microparticle as a pattern of holes. As the Examiner admits, "Shamir fails to disclose a thickness of 0.1 to 5.0 micrometers, a width of 0.5 to 50 micrometers, and length of 0.5 to 50 micrometers." Office Action at page 2. Indeed, Shamir teaches a microlabel with an overall size of at least 1 mm x 1 mm, approximately 0.5 mm thick. *See, e.g.*, Shamir at column 5, lines 1-3. Applicants respectfully note that Shamir's microlabels are not just greater in size than the coded microparticles described in the instant application, they are at least an order of magnitude greater in size.

Moreover, contrary to the Examiner's assertions,<sup>1</sup> Shamir does not teach or even suggest a microparticle that is marked with digitally-coded machine-readable information that is etched through the microparticle as a pattern of holes. Instead, Shamir teaches a code that is formed by colored bars or lines. See, e.g., column 3, lines 25 through 42; column 4, lines 11-17 and 48-68; column 5, lines 4 through 17. Applicants respectfully submit that the Examiner appears to have erred in equating the terms "shape" and "die."<sup>2</sup> Office Action at page 4. Applicants further submit that Figures 14-16 of Shamir do not teach or even suggest a microparticle that is marked with digitally-coded machine-readable information that is etched through the microparticle as a pattern of holes. Indeed, Figures 14-16 of Shamir indicate a method for producing a color-coded label.

For at least the foregoing reasons, Shamir fails to teach or suggest all of the claim limitations. Applicants therefore submit that the Office has failed to establish a *prima facie* case of obviousness.

The Office has also failed to establish a *prima facie* case of obviousness because there has been no demonstration of a reasonable expectation of success in modifying the teachings of Shamir. The Office alleges that modification of the teachings of Shamir "would be a matter of design variation to have a desirable size and could be adjusted/modified suitably to fit the appropriate application, that is to accommodate the item's/product's dimension." Office Action at page 3. Applicants strongly disagree. As noted above, Shamir's microlabels are not just greater in size than the coded microparticles described in the instant application, but at least an order of magnitude greater in size. Applicants submit that as the Shamir method of building up levels of colored material currently produces particles of **0.5 mm** thickness, one of ordinary skill in the art at the time the application was made would not have had a reasonable

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<sup>1</sup> "Shamir discloses an apparatus, wherein the microparticle 40 has a shape/die representative of a unique code" and that "Shamir teaches an apparatus, wherein the microparticle 40 defines pits, holes or notches that represent a machine-readable code (See Figs. # 14A-B, 15 and 16 of Shamir)." Office Action at page 4.

<sup>2</sup> Applicants respectfully submit that an integrated circuit die is a section of a wafer on which an integrated circuit is printed. See, e.g., Shamir at column 1, lines 14 through 31.

expectation of success in producing a particle of **0.1  $\mu\text{m}$**  thickness. *See, e.g.*, Shamir at column 5, lines 1 through 17. Shamir provides that the width of the color bars are in the range of 5-120  $\mu\text{m}$  per bar. *See, e.g.*, Shamir at column 4, lines 11-17. As such, one of ordinary skill in the art would not have a reasonable expectation of success of adapting the method of Shamir to produce a particle of 0.1  $\mu\text{m}$  thickness. Moreover, Applicants note that the Shamir method contemplates individual feeding, orienting and handling of microlabels. *See, e.g.*, Shamir at column 5, lines 16 through 17. Applicants submit that, in light of the individual handling contemplated in Shamir, one of skill in the art at the time the application was made would not have had a reasonable expectation of success in producing a coded particle that was at least an order of magnitude smaller than the particle described in Shamir. Applicants submit that both the manufacturing method and the handling requirement described in Shamir demonstrate that one of skill in the art at the time the application was made would **not** have had a reasonable expectation of success in modifying the teachings of Shamir to produce the claimed invention.

Finally, Applicants submit that the Examiner's reliance on *In re Aller* is misplaced. *In re Aller*, 105 USPQ 233 (cited in the Office Action at page 3). For the reasons described above, the differences between what Shamir describes and the claimed invention do not involve a mere discovery of "optimum or workable ranges that involve routine skill in the art." *Id.* Indeed, the differences between what Shamir describes and the claimed invention are differences of kind, not merely of degree. For example, Shamir does not teach or even suggest a microparticle that is marked with digitally-coded machine-readable information that is etched through the microparticle as a pattern of holes. As such, *In re Aller* is inapplicable in the circumstance.

In light of these remarks, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 103(a) for purported unpatentability over Shamir (U.S. 5,118,369, filed August 23, 1990).

### Conclusion

In view of the above, each of the presently pending claims is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejections of the claims and to pass this application to issue. The Examiner is encouraged to contact the undersigned at (202) 942-5512 should any additional information be necessary for allowance.

Respectfully submitted,



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